

WHAT IS CLAIMED IS:

1. An optical disk medium with a spiral recording track divided into physical segments of a specific length each of which has a preformat modulation section  
5 formed in a specific position of a part of the segment, the optical disk medium comprising:

a recording data string composed of a plurality of synchronous frames each of which is formed by dividing an original data string of a specific length into  
10 blocks, creating error correction codes, adding the codes to the blocks, and further placing a fixed number of data items converted into synchronous data and coding data;

data items in the coding data contributing to the  
15 creation of the same error correction code which are arranged at regular intervals of  $E$  in the recording data string, with a data segment length  $L$  obtained by adding an additional synchronous frame to the recording data string and a physical segment length  $A$  satisfying  
20 the equation  $L = mA$  where  $m$  is a natural number and,  $A$  is set indivisible by  $E$ .

2. The optical disk medium according to claim 1, wherein the recording track is wobbled at a specific single frequency, the wobbling is modulated in the  
25 preformat modulation section, and the preformat modulation section is 20% or less of the physical segment.

3. The optical disk medium according to claim 1, wherein a data recording start position and a data recording end position lie in the additional synchronous frame.

5           4. The optical disk medium according to any one of claims 1 to 3, wherein the optical disk medium is a medium with a CAV (constant angular velocity) configuration or a zone CAV configuration,

10           the physical segments are arranged radially in a single zone, and

            the interval E, the data segment length L, and the physical segment length A are expressed in units of a prospect angle with respect to the center of the disk.

15           5. The optical disk medium according to claim 2, wherein the optical disk medium is an optical disk which has land recording tracks and groove recording tracks and causes groove walls on the right and left sides of a recording track to wobble in phase with each other and which has a part where groove walls on the  
20           right and left sides vary in opposite phase with each other in a part of the preformat modulation section in the physical segment area.

25           6. An optical disk apparatus for recording data onto and reproducing data from an optical disk medium with a spiral recording track divided into physical segments of a specific length each of which has a preformat modulation section formed in a specific

position of a part of the segment, the optical disk apparatus comprising:

5 a recording data string composed of a plurality of synchronous frames each of which is formed by dividing an original data string of a specific length into blocks, creating error correction codes, adding the codes to the blocks, and further placing a fixed number of data items converted into synchronous data and coding data;

10 data items in the coding data contributing to the creation of the same error correction code which are arranged at regular intervals of E in the recording data string, with a data segment length L obtained by adding an additional synchronous frame to the recording data string and a physical segment length A satisfying  
15 the equation  $L = mA$  where m is a natural number and, A is set indivisible by E.

7. The optical disk apparatus according to claim 6, wherein a data recording start position and a  
20 data recording end position lie in the additional synchronous frame.

8. A reproduction-only optical disk medium which has the same recording data structure as that of the format used for a recording-type optical disk according  
25 to claim 1 and which has data strings recorded thereon in prepits beforehand.